12KP4-A
CATHODE-RAY TUBE

12-INCH ROUND, GLASS
FOCUS—MAGNETIC
DEFLECTION—MAGNETIC
54-DEGREE DEFLECTION ANGLE

11¼- BY 8½-INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
ALUMINIZED SCREEN
EXTERNAL CONDUCTIVE COATING

DESCRIPTION AND RATING

The 12KP4-A is a magnetic-focus and deflection, direct-view all-glass picture tube which provides a 11¼-by-8½-inch picture with rounded sides for television applications. The electron gun does not require an external ion-trap magnet. Other features of this tube include a high-quality gray faceplate which increases picture contrast and detail under high-ambient-light conditions and a reflective aluminized screen to increase light output. An external conductive coating serves as a filter capacitor when grounded.

GENERAL

ELECTRICAL
Heater Voltage ................................................................. 6.3 Volts
Heater Current ................................................................. 0.6 ± 10% Amperes

Focusing Method—Magnetic
Deflecting Method—Magnetic
Deflection Angle, approximate ........................................... 54 Degrees

Direct Inter-electrode Capacitances, approximate
Cathode to All Other Electrodes ........................................... 5 µµf
Grid-No. 1 to All Other Electrodes ........................................ 6 µµf
External Conductive Coating to Anode
Maximum .............................................................................. 2500 µµf
Minimum ............................................................................... 500 µµf

OPTICAL
Phosphor Number—P4, Sulfide Type
  Fluorescent Color—White
  Phosphorescent Color—White
  Persistence—Short

Faceplate—Gray
  Light Transmission at Center, approximate ............................ 66 Percent
MECHANICAL

Over-all Length ................................................................. 17 3/8 ± 3/8 Inches
Greatest Bulb Diameter ......................................................... 12 7/16 ± 3/8 Inches
Minimum Useful Screen Diameter ........................................... 11 1/4 Inches
Neck Length ................................................................. .7 3/8 Inches

Bulb Number, ASA Designation—J99 1/2 A1
Bulb Contact—Recessed Small-cavity Cap, JETEC No. J1-21
Base—Small-shell Duodecal 5-Pin, JETEC No. B5-57
Basing, JETEC Designation—12N
Bulb Contact Alignment
   Anode Contact Aligns with Pin No. 3 Position ±30 Degrees

Mounting Position—Any
Net Weight, approximate ................................................. 11 1/2 Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES*

Anode Voltage† ................................................................. 12,000 Max Volts DC
Grid-No. 2 Voltage ............................................................... 410 Max Volts DC
Grid-No. 1 Voltage
   Negative-Bias Value ........................................................... 125 Max Volts DC
   Positive-Bias Value ............................................................ 0 Max Volts DC
   Positive-Peak Value ........................................................... 2 Max Volts

Peak Heater-Cathode Voltage‡
   Heater Negative with Respect to Cathode
      During Warm-up Period not to Exceed 15 Seconds .................. 410 Max Volts
      After Equipment Warm-up Period .................................. 140 Max Volts
   Heater Positive with Respect to Cathode ................................ 140 Max Volts

TYPICAL OPERATING CONDITIONS

Anode Voltage§ ................................................................. 11,000 Volts DC
Grid-No. 2 Voltage ............................................................... 250 Volts DC
Grid-No. 1 Voltageπ .............................................................. -22 to -58 Volts DC
Focusing Coil Current△, approximate .................................. 135 Milliamperes DC

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance ............................................... 1.5 Max Megohms

* The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than ten percent.
† Anode and grid-No. 3 which are connected together within the tube are referred to herein as anode.
‡ Cathode should be returned to one side or to the midtap of the heater transformer winding.
§ Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 9000 volts.
π For visual extinction of focused raster.
△ For JETEC focusing coil No. 106 with distance from the yoke-reference-line to center-of-air-gap equal to 3¼ inches.

NOTES:
1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE REFERENCE-LINE GAGE (RETMA NO. 112) WHEN THE GAGE IS RESTING ON THE CONE.
2. ANODE TERMINAL ALIGNS WITH PIN-NUM. 3 POSITION ±30 DEGREES.
3. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.